

March 20, 2000

James P. Mayer
Executive Director
Little Hoover Commission
925 L Street, Suite 805
Sacramento, CA 95814

Re: Public Hearing – Use of Technology in State Government

In response to your invitation to provide recommendations on State technology practices and ideas on how modern technologies may be used to improve the State's service to the citizens, I am pleased to provide the following information, which we will discuss during testimony on March 23.

SAIC, as a leader in Program Management and Systems Integration of highly complex systems for government, welcomes the opportunity to share some of our experience in developing best practices for management of technology initiatives. In another area of significant interest to the State of California is the role of emerging technology in the delivery of government services to the citizenry. SAIC is well positioned through our technology experience in the development of Next Generation, and the implementation of such technologies for the public sector, such as outsourcing for the County of San Diego.

Carl L. Silva, SAIC Corporate Vice President, with responsibility in convergence technology provides our initial testimony and will discuss the opportunities E-Technology (E-Governance) will open to the public sector and our own implementation of one of these exciting technologies.

Introduction – Where E-Technology is Taking Us

A combination of Internet, telecommunication advances, and improved information technology capabilities are permitting major advancements in the delivery of government services to constituents. With the Internet, efficiency hits light-speed as residents access many services directly from their homes or offices. Across the country, government agencies are replacing outdated, patchwork systems of first-, second-, and third-generation computers and data centers with the most appropriate technology and applications that the world-class information technology vendors can provide.

The goal of these government agencies is to put government services at the fingertips of citizens, wherever they happen to live. With "virtual" government services, citizens won't have to get in a car and drive for miles to reach a government office and then stand in line every time they want to look up a document or fill out a form. Instead, more and more services will be available over the Internet at the convenience of residents and businesses.

Not only will a "virtual government" be more convenient, e-government will take cars off the road and help reduce travel between headquarters and remote field offices. Voting services that are already on the Internet, such as poll locator and instant election results, will become faster and more accessible. For those citizens that do not have a computer in their home or office, terminals located in public facilities and computer kiosks in shopping malls can provide access to the offerings.

Businesses should find these online services especially helpful. Building plans, permit applications, and appointments will be enabled over the Internet. Government employees will have the tools to do their jobs better and more efficiently. That's good for both the employees and citizens.

Government agencies also benefit from e-government solutions, as data is shared more easily between agencies and duplicate data entry is reduced or eliminated. Office processes will rely less and less on paper transfer and more on electronic collaboration and sharing of electronic files and data.

These visions, however, cannot be enacted without developing a strategy that improves network capabilities and then provides infrastructure support to ensure data security, application integration, and information protection. To support these functions, **data, voice and video transmissions**, or Next Generation networks **are converged** and the networks are updated to handle the increased bandwidth requirements.

Next Generation Networks

According to Gartner Group, by the year 2003, seventy percent of enterprises will have replaced at least two-thirds of their networks and fifteen percent will have replaced their networks totally. Also by 2003, more than fifty percent of intra-enterprise communications needs (including voice) will move from individually procured network services to a converged, multi-service network-service provider (NSP) network.

To address these needs, SAIC-Telcordia decided to design, develop and implement a converged enterprise network which is **based on legacy architecture** that integrates commercially available products without custom software development. The converged network was operational with voice over Internet Protocol (IP) and other applications. Initially this was deployed in a test bed and rolled out last year to the Corporation with no service disruption. Based on a phased migration strategy, the network is currently used in conjunction with existing wireless services, such as cell phone access.

This solution would only be viable if it has added value to the corporate infrastructure. The basic project objectives were to increase flexibility, value of the information infrastructure, provide cost savings, and create value-adding applications. Further goals were to improve quality of service of the information infrastructure and increase disaster recovery options. Creation of an easy-to-use collaborative environment for 38,000+ knowledge workers was also crucial.

The converged network resulted in an average payback period of seven months and had ZERO impact to operations. Capital expenditures were minimal, especially since only five new routers were warranted. Also, the new network made use of the existing infrastructure which were authentication and billing services, and the enterprise network management system. This was performed much more quickly and with less disruption achieved in convergence and cost savings.

The reduction in communication costs, based on point-to-point long distance for locations identified, is tremendous. With a full implementation of targeted locations, the expected savings are approximately \$56K a month. This is a savings of about 40% of telecommunication costs. Furthermore, dollars saved were reinvested in such a way that the project became self-supporting.

Also, while capability of the network increased, operational and management costs remained stable. Incremental rollout and financial plan meant the project could adjust to changing SAIC-Telcordia needs. Another gain was additional disaster recovery capability.

At present, for the SAIC-Telcordia converged network estimated usage is 40% in major locations. Users have easy access, use an already familiar security process, gain transparent fax over IP, and experience no voice degradation. There are additional cost savings on corporate travel due to business-enabling applications such as voice over IP, fax over IP, video multicast, dialPlus, and Automated Attendant.

Collaboration

Online conferencing is a capability that is emerging as Next Generation networks allow organizations to overcome the hurdles of time and place. The technology allows participants to collaborate in real-time over the Internet (or other networks) and allow teams to stay in touch and collaborate on documents and presentations no matter where team members may be physically located. Team members can be located anywhere in the world and yet be available to support team needs.

These online collaboration capabilities reduce the need for travel, and thereby trim costs, but they also increase collaboration and productivity. Initial uses for the technology are for corporate communications and distance training, web-based sales and marketing, academic distance learning, online technical and help desk support.

This technology will enable agencies to conduct business in significantly different ways. As the technology matures and high-speed network bandwidth is made more widely available, there will be significant opportunities for applying this collaboration both in the government-to-government arena, but also to the government-to-citizen groups through such services as the following:

- Under served areas in remote locations can be included through new service delivery models.
- IT training and technology transfer can become much more widely available to agency staff members when the need for travel and per diem costs for trade shows is eliminated by virtual trade shows.
- Schools can collaborate to provide educational offerings, such as specialized courses, individualized instruction, and advanced placement courses which have not traditionally been available to poor or small under served districts. SAIC is currently implementing such technology under contract with the Clark County, Nevada, school district.
- Professional training can be offered more effectively and cost efficiently to staff, including continuing education for teachers.

Information Security

These capabilities that are available through new technologies pose a common dilemma to those deploying them. How can information security be maintained while transporting so much information across the network and providing much greater access to data? These IT improvements cannot be made without carefully planning an information security strategy.

Equally important with IT security innovations are the development of user policies that deal with information security.

Traditional IT architecture has required proprietary enterprise information to be located inside the firewall, and small amounts of IT assets were accessible at the edge of the network. But e-government and e-business requires business partners to have access to larger amounts of information, making traditional IT architecture problematic. While firewalls are not going away, new technologies for enterprise security, such as directory-enabled authentication are emerging. These techniques control access with a finer level of granularity. They allow customers, suppliers, and other business partners access to internal computing resources by providing access to a directory assigned on a per-user basis or by groups of users. Firewalls will continue to be used to control access to systems on a gross level, but new controls and business processes will need to be defined for varying degrees of access by classes of users.

Changing Models for Procuring Services

Continuing resource constraints are forcing all IT organizations to employ selective sourcing of key services and personnel. There are, however, many models to select for outsourcing of services. It is clear that with IT changes which will certainly occur in the next few years, it is imperative to have a vendor relationship that is based on partnering and working together to form creative solutions to changing business needs.

SAIC is a member of the Pennant Alliance, which recently won the San Diego County outsourcing effort. This contract ushers in a new era of digital governance for the County, with plans for providing an electronic source for everything from license renewals to zoning regulations and parking-fine payments. The integration of fragmented infrastructures into a single state-of-the-art system, based on standardization of hardware and software, enables a substantial reengineering of the way government services are provided. The cost to the county is estimated to be between \$500 million and \$700 million over 10 years, and is one of the largest of its kind in the country. By making more services available online, San Diego expects to be able to reduce the cost of government as an estimated 70% of the county's 2.6 million residents own personal computers. The County wants to expand its "hours of operation" for many services to a 24-hours-per-day, 365-days-per-year schedule. The contract has already netted \$33 million in savings, but this is just the start. These funds can be reinvested into providing other programs and services that the public is demanding.

As personal computer use increases to the levels we see in counties like San Diego, it is natural that the State can take advantage of similar technologies for its citizenry. As with San Diego, a major investment not just in automating on-line connection with citizens, but also in changing the way in which information is kept by the State is imperative. The implementation of common repositories of citizen and state data is a first step. There is no reason that multiple database systems containing the same duplicative data must continue to exist. Even in the seventh largest economy in the world, the technology scale exists to maintain common repositories whereby citizens, state workers, and other clients of state information can easily access accurate and consistent information across all agencies and departments.

The following testimony is from Richard H. Klippert, Director of SAIC's Systems Integration Solutions Division located in Sacramento.

The State's Challenge in Managing Technology Modernization

Probably the most significant challenge facing any public entity with a focus on Enterprise Modernization in the next decade is staffing. The demographics of current Federal and State employment lead to the conclusion that a significant percentage of your employees will be retiring in the next five years. The demand for technically fluent workers from the commercial sector is rapidly increasing and will continue as the new technologies we discussed are rolled out for commercial use. The complexity of State staffing and the salary structure currently in use do not compete with the commercial markets when it comes to hiring technology workers.

It would appear that we will observe a paradigm shift in the next few years in the manner in which the employment market and the labor pool interact. In the past, commercial and government entities have advertised job vacancies and the labor pool has responded with resumes, interview. Ultimately the employer has selected the most qualified from among several applicants. Picture the case as seen on a daily basis, where there are no applicants for your advertised positions. When I hire today, I source people who already are employed and in most cases are not actively looking for a new job. I do this through networking with my clients, vendors and partners in the commercial fields and the state never sees these people. I offer these employees salaries, stock options, and bonuses that your compensation structure does not match and I provide working conditions, equipment, and perks that most public employment does not match. SAIC is no different from any other commercial vendors in the Information Technology area. We all compete for the same labor pool. This picture does not look good for your needs as you modernize the State's infrastructure.

The second paradigm shift may be subtler. As we in the IT world face similar challenges from a reduced labor pool and increased demands from our commercial clients, we will have decisions to make on to whom we provide our resources. The State is accustomed to having multiple bidders for its initiatives in technology. You may face the challenge of no responses to job vacancies. Imagine if no one bid on the next upgrade to the DMV systems or your tax modernization initiative. If industry has a shortage of qualified staff and an abundance of funded commercial work, where is the incentive to bid for marginally profitable public sector projects? The result for the State is marginally qualified bidders, resultant overruns and failures or a significantly higher cost than currently anticipated or budgeted.

One way that the State may mitigate these challenges is by forming lasting relationships with key vendors of Information Technology services before the trends discussed occur. The Federal Government has recently been conducting omnibus contract competitions for a broad range of skills and identifying through this process a set of skilled vendors. The government may then negotiate tasks through these contracts with any of the vendors selected without having to conduct lengthy and costly procurements for each task. These contracts may run up to ten years with total obligation values in the billions of dollars. Tasks may be for major infrastructure projects costing 100's of millions of dollars and once negotiated, may last with a vendor for years. Your Master Services Agreements (MSA) are similar to this method of contracting. This type of contract is attractive to industry because

the cost of working with the State is reduced and the costs avoided in the acquisition process may be applied to the actual work of implementing real value.

The Challenge of Success

Once the State has achieved a contract for implementation of a complex technology, how do you ensure success? Gartner Group continues to report that 1/3 of all major IT projects fail, 1/3 work only after exceeding budgeted expense and time by 100%, and 1/3 succeed by meeting cost and schedule. This applies to commercial industry, as well as public sector. From the perspective of 30 years in the industry, and numerous complex system developments in many roles, I would suggest that the magic, which brings success, could be synthesized into:

- Executive sponsorship, support, and oversight.
- Qualified key personnel: Program Manager, System Architect, and Senior Technologists.
- Disciplined process orientation: SEI Level 3, ISO 9001.
- Focus on vendor qualification and delivery.
- Approach a large system from manageable components and pilot/prototype before assembling the whole.
- Test thoroughly, often, and at component, as well as system levels before production.

If the State does not have the skills to accomplish the above for major undertakings, then a separate contract with a Systems Integrator that can provide these skills should be considered. This would normally be separate from the Prime contract. The Systems Integrator should be considered as a State entity for the purpose of the engagement. In the Federal sector, Mitre Corporation performed this role for many successful DOD engagements and was considered an honest broker by the government and industry alike. With a reduced labor pool already discussed, this may be the only way the State of California can accomplish the many initiatives you are facing over the coming years.

Carl Silva and I thank you for the opportunity to share our thoughts regarding the direction technology is heading and how the State of California may participate and prosper in this exciting future.

Sincerely,

Richard H. Klippert